

Nitrosopyrrolidine
(NPYR)

- 1977 Brunnemann, Yu and Hoffmann reported NPYR in concentrations of 2.6 to 52 nanograms per cigarette in the un-aged mainstream smoke of 17 commercial and experimental cigarettes and 204 to 612 nanograms per cigarette in the sidestream smoke. The authors note that their values are lower than values earlier reported by others, but they attribute this to their avoidance of artifactual formation. Indeed, they state that values for NDMA and NPYR were 25 to 100% lower when smoked under the same conditions but with precautions. [1]
- 1979 The U.S. Surgeon General lists NPYR as a constituent of the gas phase of mainstream cigarette smoke at a concentration of 11 to 34 nanograms. [2]
- 1979-1980 In two separate studies, Rinkus *et al.* (1979) and Bartsch *et al.* (1980) found several cigarette smoke constituents to be mutagenic. Among those were NPYR. [3]
- 1982 The U.S. Surgeon General notes that of the volatile nitrosamines, NPYR, along with NDMA, occurs in the highest concentrations, and is a strong to moderate organ specific carcinogen. [4]
- 1982 The Third Annual Report on Carcinogens reports that "there is sufficient evidence for the carcinogenicity of NPYR in experimental animals." The report notes that NPYR has been found in mainstream tobacco smoke in amounts up to 0.113 micrograms per cigarette. [5]

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1985 The International Agency for Research on Cancer
concludes that NPYR is carcinogenic in experimental
animals. [6]

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References

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- [4] U.S. Public Health Service, *The Health Consequences of Smoking: Cancer. A Report of the Surgeon General* (1982).
- [5] National Technical Information Service, *Third Annual Report on Carcinogens*, 197 (1982)
- [6] International Agency for Research on Cancer, *Tobacco Smoking*, IARC Monograph 38 (1985 Draft).

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